Dynamic capabilities in the public sector: The case of the UK's Government Digital Service

Rainer Kattel
Professor of Innovation and Public Governance
UCL Institute for Innovation and Public Purpose

Ville Takala
Honorary Research Fellow
UCL Institute for Innovation and Public Purpose

UCL Institute for Innovation and Public Purpose

About the Institute for Innovation and Public Purpose

The UCL Institute for Innovation and Public Purpose (IIPP) aims to develop a new framework for creating, nurturing and evaluating public value in order to achieve economic growth that is more innovation-led, inclusive and sustainable.

We intend this framework to inform the debate about the direction of economic growth and the use of mission-oriented policies to confront social and technological problems. Our work will feed into innovation and industrial policy, financial reform, institutional change, and sustainable development.

A key pillar of IIPP's research is its understanding of markets as outcomes of the interactions between different actors. In this context, public policy should not be seen as simply fixing market failures but also as actively shaping and co-creating markets. Re-focusing and designing public organisations around mission-led, public purpose aims will help tackle the grand challenges facing the 21st century.

IIPP is housed in The Bartlett, a leading global Faculty of the Built Environment at University College London (UCL), with its radical thinking about space, design and sustainability.

This report can be referenced as follows:

Dynamic capabilities in the public sector: The case of the UK's Government Digital Service

Rainer Kattel* and Ville Takala **

Abstract

This study explores the concept of dynamic capabilities in the public sector. Using the UK's Government Digital Service (GDS) as a case study, we demonstrate how such capabilities form and how they evolve over time. Drawing on expert interviews with former and current employees, we argue that GDS's success was based on introducing new ways of working and providing value in government. Through successfully professionalising such new skills and notions of value across government, GDS eventually undermined its own dynamic capabilities. Drawing on our findings, we show that dynamic capabilities are systemic resources and abilities to question existing routines and capacities. We conclude by arguing that dynamic capabilities need periodic renewal and nurturing as they are constantly being absorbed into existing routines.

* Rainer Kattel, r.kattel@ucl.ac.uk, Professor of Innovation and Public Governance, UCL Institute for Innovation and Public Purpose.
** Ville Takala, v.takala@ucl.ac.uk, Honorary Research Fellow, UCL Institute for Innovation and Public Purpose

1.   Introduction

Since it was founded in 2011, the United Kingdom's Government Digital Service (GDS) has in many ways become the gold standard public digital agency. It has won awards and praise among its peers and heads of governments, and its blueprint has been copied in numerous countries (Clarke, 2019). The story of its foundation and success has been told in op-eds, blog posts (Greenway, 2020; Ross, 2018; The Economist, 2020) and academic case studies (Birkinshaw and Duncan, 2014; Eaves and Goldberg, 2017).[1] However, GDS has evolved significantly in the last decade. From a small office with a dozen or so people, it has grown into an agency with more than 850 employees; its budget has increased from £37 million in 2012/13 to £455 million for the period from April 2016 to March 2020 (National Audit Office, 2017). In this article, we are interested in GDS's evolution; that is, how and why it has changed over time. GDS is an exceptional case of a dynamic public organisation with an oversized impact. In order to tell the GDS story from 2012 to the present, we conducted 24 interviews with current and former GDS employees and identified three distinct yet overlapping phases of its development. We argue that the story of GDS's evolution offers a way to understand dynamic capabilities in the public sector: how they are formed and, in particular, how they develop over time.

COVID-19 has made it clear that dynamic capabilities are crucial to effective governance (Mazzucato and Kattel, 2020). Public organisations are often caught between a rock and a hard place: faced with tackling intractable or grand challenges, governments need to develop long-term solutions (no hackathon can solve climate change), yet some aspects of these challenges require an agile and dynamic response (as in the case of COVID-19) (Drechsler and Kattel, 2020). Such a paradoxical position implies that public organisations need to develop frameworks and tools for governments to become more proactive when taking on multifaceted, long-term issues facing societies (Kim and Zhang, 2016; Peters, 2017). Yet, modern public organisations fall under the 'neutrality assumption', as they are expected to follow and implement choices made by political leadership (Alford et al., 2016). The "dual leadership" (Hartley, 2018) of politics and expertise puts public administration organisations into a reactive mode in relation to the grand challenges, by definition waiting for political leadership and guidance. We argue that the concept of public sector dynamic capabilities offers a way for public organisations to play a more proactive role in tackling grand challenges. This might be particularly relevant in digital transformation, as big private platforms have become increasingly powerful and dominant, forcing public organisations to play catch-up through antitrust action and other regulatory initiatives.

Over the past three decades, business strategy has come to rely on the idea of dynamic capabilities as "the ability of an organization and its management to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al., 1997), and this has led to rich academic discussions. While some governments or public organisations have clearly been able to develop and exercise dynamic capabilities, academic discussion of this concept in the public sphere is much less vibrant (Kattel and Mazzucato, 2018;

---

[1] Since its inception, GDS has been an open an organisation, often reflecting its evolutions in blogs by its employees; see here: https://gds.blog.gov.uk/.

Piening, 2013). The present article aims to contribute to the discussion of dynamic capabilities in the public sector that would fill an existing void in our understanding of public administration and government functioning.

The remainder of this article is structured as follows. First, we discuss existing perspectives on public sector dynamic capabilities and identify key gaps in the current understanding of the concept. Second, we review the key features of digital transformation in the UK so far and add to this story by conceptualising the history of GDS in three phrases. We end by discussing the case of GDS and what it can teach us about dynamic capabilities in the public sector.

2. Dynamic capabilities in the public sector: state of the art

Three kinds of academic literature touch on dynamic capabilities. The first is the Weberian tradition of long-term capacity building in the public sector for development (Evans, 1995; Evans and Rauch, 1999) and generally for public policies (Painter and Pierre, 2005; Wu et al., 2018). The second is literature inspired by Schumpeter looking at new and often peripheral 'change agents' or 'innovators' in the public sector (Breznitz et al., 2018; Breznitz and Ornston, 2013), more recently looking at agile digital units and innovations labs (Clarke, 2019; Mergel, 2019; Tõnurist et al., 2017). The third is attempts to synthesise the above two perspectives into a single conceptual proposition of organisational configurations (Mintzberg, 1989) that simultaneously deliver the long-term stability of Weberian capacities and the agility of Schumpeterian innovators (Karo and Kattel, 2018; Kattel et al., 2019; Kattel and Mazzucato, 2018).

The Weberian tradition of building public sector capacity has been best expressed in the discussion about the developmental state. Particularly the East Asian developmental state scholars – Amsden (1989), Evans (1998; Evans and Rauch, 1999), Haggard (1990), Wade (1990) – turned the concept of highly capable bureaucracy, together with a specific notion of embedded autonomy, into a crucial variable in explaining the strong catching-up performance of East Asian economies. The developmental state framework focuses on long-term investment into public sector capacities through the recruitment of a skilled workforce and meritocratic promotion and career management. Evans and Rauch (1999) cemented these ideas through a quantitative analysis that evaluated the importance of the 'Weberian' elements (merit-based recruitment and career systems) in a broad range of countries.

This concept of capacity has evolved in public policy and administration literature as an analytical construction. Thus, for instance, Wu, Ramesh and Howlett provide a synthesis definition of policy capacity "as the set of skills and resources – or competencies and capabilities – necessary to perform policy functions" (2018: 3). While these analytical frameworks are useful tools and concepts, they rarely focus on dynamic changes within skill and resources, competences, and capabilities.

The Schumpeterian tradition of (dynamic) capabilities builds on the notion of ambidexterity of successful businesses: the ability of an organisation to explore new opportunities whilst

simultaneously continuing to exploit existing strengths (March, 1991). This builds on Penrose's path-breaking work on how innovation is driven by unused resources of the firm and "'dynamic' interacting process" by management that "encourages continuous growth but limits the rate of growth" (Penrose, 2009). Teece and Pisano (1994: 1) codified the dialectic process that drives and limits innovations at the same time as dynamic capabilities as follows:

> The term 'dynamic' refers to the shifting character of the environment; certain strategic responses are required when time-to-market and timing is critical, the pace of innovation accelerating, and the nature of future competition and markets difficult to determine. The term 'capabilities' emphasizes the key role of strategic management in appropriately adapting, integrating, and re-configuring internal and external organizational skills, resources, and functional competencies toward changing the environment.

This idea of dynamic capabilities has been transposed into the public sector by two different strands of research. The first is research into innovation agencies, and the second is research into emerging public digital units and various innovation labs. Above all, Breznitz has shown that such agencies as DARPA in the US, but also key innovation agencies in Finland, Sweden, Israel, Ireland, and Singapore, were not central Weberian agencies, as assumed by developmental state discussions described above but rather were peripheral agencies (Breznitz et al., 2018; Breznitz and Ornston, 2013). These agencies were key sources of policy innovations necessary for promoting rapid innovation-based competition through explorations in innovation policy, driven partially by continuous, radical experimentation in their core mission and by the existence of sufficient managerial capacities (or, slack). The peripheral status of these agencies was a vital component of their success, as it reduced the likelihood of political interference and space for policy experimentation and for the formation of new public–private interactions.

Similarly, the adaptation in the public sector of new working practices from (strategic) design and agile software development has driven the emergence of new, often peripheral, public organisations in the form of public sector design, digital and innovation labs, (Bason, 2017; Hill, 2015; Mergel, 2020; Tõnurist et al., 2017). These working practices focus on agile processes such as prototyping and experimentation, relying on epistemological frameworks from action research and ethnography rather than economics or public policy analysis. In the past few years these new agencies have brought experiential, experimental, and techno-solutionist 'hacker' routines to public organisations (van Buuren et al., 2020).

Piening's review of the literature on dynamic capabilities in the public sector attempts to synthesise the two above-mentioned schools: Weberian development capacities and Schumpeterian new organisations and respective capabilities. He does so by arguing that dynamic capabilities are more likely to emerge when sufficient resources are available, there is need for new sets of skills within public organisations, and there is a growing sense of dissatisfaction with existing capabilities and heightened public attention to underlying problems (Piening, 2013). Drechsler and Kattel (2020) propose that entrepreneurial governments are able to provide agility and stability at the same time, with the former often originating in external factors (such as individuals or networks). One could argue that, in the neutrality model of public management, the focus is on routines and expertise that enable civil servants to provide stability (namely, continuity,

transparency, predictability of services and interventions) (Peters, 2018). Hence, as argued by Karo and Kattel (2018) and Kattel and Mazzucato (2018), dynamic capabilities should be understood in the wider organisational context: public organisations typically need to cooperate with other public organisations, thus dynamic activities rest in the wider organisational configurations. As argued by Minztberg, different organisations in an organisational configuration possess different routines and capabilities.

While the synthesis attempts described above focus on how to conceptualise dynamic capabilities in public organisations (as differing from private organisations) and on explaining the circumstances of their emergence, the key gap in the literature is how dynamic capabilities evolve in public organisations. In other words, based on previous literature we can posit that dynamic capabilities are systemic resources and abilities to question existing routines and capacities. In this article we are interested in how such dynamic capabilities are managed and maintained, and what are the factors in driving their evolution in an organisation and its context. We posit that dynamic capabilities need periodic renewal and nurturing as they are constantly being absorbed into existing routines. Thus, maintaining dynamic capabilities demands specific organisational focus and resources (Zollo and Winter, 2002)

In what follows we aim to show that the evolution of GDS can be viewed as a conscious effort to create dynamic capabilities in the form of a new organisation that questioned dominant routines in government IT and generated new approaches, frameworks and skills to do digital transformation differently. These new routines have, over time, become part of the central government machinery. GDS has successfully professionalised these new routines beyond its own organisational boundaries. However, this success came at a cost of waning dynamic capabilities within GDS and its wider context.

3.   Study design and methodology

Between December 2019 and March 2020, we interviewed a total of 24 current and former GDS employees. We recruited the former GDS employees through a snowballing method, where we initially asked a number of former employees who had worked at GDS during its early days to identify individuals who would be able to talk to its foundations from diverse perspectives. With regard to current employees, GDS generously provided access as well as suggestions for individuals to be interviewed (14 in total). Interviews were conducted either at the premises of GDS, University College London, or online via video conferencing software, and they lasted between 40 and 90 minutes. Combined, our sample includes individuals in high-level managerial positions, as well as experts from a variety of functions, including design, data science, strategy, product management and software engineering.[2]

---

[2] Interview questions and list of people interviewed can be found here:
https://docs.google.com/document/d/1Yjj-urUrYgWsb3XMI5fkCnqXUQMt8xayOOQX6Ysvenc/edit?usp=sharing.

The same interview questionnaire was used with both groups. Drawing on our reading of pre-existing literature on dynamic capabilities and digital service teams (see discussion in section two), our questions focused on how the following aspects of GDS evolved over the years:

- What was the focus of GDS activities and why?
- What value did GDS provide and how?
- How did GDS see its relations with other public organisations and with market actors?
- What was the focus of internal organisational practices?

Rapley (2001), among others, advises that when analysing interview data, one should dismiss the idea of gaining access to the intimate interior of a person and should focus instead on what the interviews contain in terms of performativity and discourse. Thus, when analysing the interview data, we relied on interpretative approaches (Miles et al., 2013), in particular Grounded theory (Glaser and Strauss 1967), where the aim is to study social processes in the environments in which they occur. Rather than test hypotheses, interpretative approaches seek to unpack the meanings and concepts used by social actors in their real-life settings. We took a two-phase approach (Gioia et al. 2013) to analysing the interview data. In the initial stage of the data analysis we sought to stay as close as possible to the informant's own language in order to give opportunities for the discovery of new concepts rather than the affirmation of existing ones. The periodisation of the evolution of GDS was a recurring theme that was repeated by multiple respondents in one form or another. Once we had organised our interview data according to the three-phase periodisation (see more below), we proceeded to a second phase where we derived thematic codes by giving our interpretation to the responses given by the interviewees. In the findings section, we have highlighted interviewee quotes that align and exemplify the thematic codes that we derived from the full interview material. Following the completion of an early draft of the paper, we sent it to our interviewees for comments, receiving further confirmation that our findings and interpretation of those findings were accurate.

DeVault and McCoy (2001) point out that, in an organisational setting, it can be challenging to recognise when informants use institutional language, so it is important to find ways of moving the discussion beyond pre-prepared statements. Accordingly, our discussion is based on the 'internal' view from GDS, critically interpreted. To expand on our analysis, future research should examine the 'external' view on GDS from organisations in central government and local authorities that have worked closely with it.

4. Context: Government digital transformation in the UK before GDS

A wide range of research has explored the history of government IT in the UK, mostly in highly critical terms (see, for example, Dunleavy et al., 2006; Perri, 2007). A long list of large-scale failures is often attributed to the influence of New Public Management (NPM) reforms, which from the 1980s onward led to waves of outsourcing IT functions to the private sector. Comparing a range of countries, Dunleavy et al. (2006) found that countries with the most enthusiastic uptake of NPM had fared particularly poorly in exploiting digitalisation, with the UK emerging as "a world

leader in ineffective IT schemes for government". According to Dunleavy et al. (2006), NPM's emphasis on the principles of disaggregation (chunking-up government hierarchies into smaller organisations), competition (both with private-sector contractors as well as within government) and incentivisation (built on pecuniary motivations instead of professionalism) fragmented administrative institutions and dramatically increased the institutional complexity of policy systems. By hollowing out public sector capabilities and bringing in new contractually based risks and barriers to cross-government policymaking, NPM drastically impaired government IT modernisation. Importantly, however, the NPM reforms also paved a way for a more porous and diverse organisational configurations in government, enabling the creation of non-standardised organisations, hiring and promotion practices (Lapuente and Walle, 2020).

Early efforts to modernise the UK government's approach to providing digital services date back to the 1990s and mostly focused on creating a central government website (Birkinshaw and Duncan, 2014; Eaves and Goldberg, 2017). Open.gov.uk and UK Online were effectively directories of other departments' websites, which allowed users to search for information and then be directed to the information portal of the relevant department. Some services were digitised, such as the ability to apply for a passport or register to vote online, but were only available on the individual departments' website. Although 2004 saw the launch of Directgov and its business-centred counterpart, Business Link, the vast majority of transactions at this point still went through hundreds of separate websites for individual departments and agencies.

By 2010, a number of factors converged to raise the profile of technology reform in the UK. Following a series of high-profile IT failures, the UK Parliament's Public Administration Select Committee published a report entitled "Government and IT – a Recipe for Rip Offs: Time for a New Approach" in 2011 (House of Commons Public Administration Committee, 2011). As summarised by Clarke (2019: 360) "The report highlighted a dearth of IT expertise; a lack of centralised, horizontal IT governance; and reliance on large-scale, long-term contracting with a small number of large private providers as central culprits driving IT failings in the government." The acute global financial crisis also compelled the government to seek spending cuts from the civil service. At the same time, the newly elected coalition government appointed the internet entrepreneur Martha Lane Fox as the "UK's Digital Champion", and commissioned her to review the government's online presence. Fox (2010) recommended reforms not only to Directgov but to the government's entire approach towards digital service delivery. Fox recommended that there should be a new, central digital team that would have absolute control of the overall user experience across all digital channels. It should be headed by a CEO reporting directly to the Cabinet Secretary. This team would ensure that Directgov became the front-end for all departments' online services to citizens and businesses, with the license to mandate cross government solutions. By opening it up to application programme interfaces (APIs) created by third parties, it would be a "wholesaler" as well as a "retail" shop front for government services.

The government closely followed Fox's recommendations, and in 2011 the UK Government Digital Service was established. As Clarke (2019: 360) writes "Responding to the then-minister for the Cabinet Office, Francis Maude, GDS grew out of the structures of the existing team responsible for the Directgov website and was initially headed by a group of digital pioneers within and outside the civil service. Mike Bracken, former lead of The Guardian newspaper's digital

transition, was selected as the organization's first executive director". As a result of major early successes and active policy transfer, GDS soon became perceived as a global leader in government digital transformation, mimicked by many countries across the world.

5. GDS: the creation of a new digital transformation paradigm

Low trust in digital identities has perhaps been the key challenge for many Western governments in digitalising public organisations and services (Halperin and Backhouse, 2012). GDS was revolutionary in that it was able to create a successful digital transformation blueprint that does not rely on (digital) identity. We can argue that there are currently two distinct digital transformation paradigms globally.[3]

First, an *identity-based paradigm* that relies on unique (digital) personal identities and builds public digital architecture around them, focusing on the interoperability of various and diverse registries and data sets. Estonia can be seen as an archetypical example of this paradigm (Kattel and Mergel, 2018), followed more recently by countries such as India and Bangladesh.

Second, an *information provenance based paradigm* that seeks to ensure that governments are digitally able to provide straightforward and truthful answers to questions (online searches) by citizens. This paradigm is rooted in the idea of citizen experiences in the digital world, and GDS can be seen as having created this paradigm.

Based on our interviews, the key elements of the paradigm created by GDS can be summarised as follows:

- Focus on search and experience: Government's digital presence should be optimised for citizens and businesses searching for information, finding and trusting its provenance. Information should be easy to find and its sources trusted. GOV.UK, its design and functionalities, content publishing guidelines, along with the closure of hundreds of existing websites, has been the flagship product of GDS since its inception.
- Work through teams and communities of practice: While GDS is a central government agency, it does not have sole responsibility for digital transformation in the UK central government. Departments and agencies have their own IT departments that can actually be larger than GDS itself (as is the case with HM Revenue and Customs). Accordingly, the role of GDS is to organise and maintain communities of practice (designers, software engineers) across central government and local authorities, but also with a wider digital community of start-ups, large IT companies, and so forth.
- Working in the open: From the outset GDS relied on the principle of openness in the sense of open-source software, sharing practices and tools, and reflecting on its own activities in public-facing blogs

---

[3] The idea of digital transformation paradigm needs to be further developed; here we use it in the sense of a model, having some form of coherence and interdependencies between its elements.

- Design principles as ways of working: GDS started by creating "Government design principles",4 which are a mixture of ideas and ways of working from service design and agile software development. Typical of the early days of GDS, the design principles were reportedly formulated in just a day and a half.
- Evidence from user research: As the first principle of "government design principles" states, user needs and corresponding research are the main sources of evidence and data for GDS. While this has been complemented in time with economics-driven research and analysis (value for money approach), user research remains fundamental to the way GDS thinks of its impact

Drawing on our interview data, as well as a wider reading of the GDS case, we argue that the GDS paradigm has evolved through three stages that build upon each other in a cumulative fashion, with a major overlap between phases two and three.[5]

First, a 'strategy is delivery' phase that introduced new concepts of value (user needs) brought in new skills and new ways of working (service design, working in the open and on the internet, agile practices) and broke existing market structures of IT providers (through procurement and spend controls). This phase lasted from 2011 to 2015, ending with the departure of the original leadership team of Mike Bracken, Tom Loosemore and Ben Terrett.

Second, a government-as-a-platform phase that built on the practices of the first phase but deepened the focus on products that could be used by other government departments, agencies and local councils (examples of such products are GOV.UK Notify, Pay, Verify). The idea of value shifted towards innovations that enable other public agents to work better and cheaper. This was based on a less combative and more collaborative approach towards partners in government. During this phase, GDS was able to show that it had created significant efficiencies and savings across government. This phase lasted from 2015 to 2017, culminating in the publication of the Government Transformation Strategy in 2017 (Government Digital Service, 2017).

Finally, a professionalisation phase that builds on the two previous phases, but with the focus shifting ever further towards building and fostering partnerships within the public sector and, above all, on emphasising the importance of government-wide profession (called digital, data and technology profession), unified job descriptions and career progression pathways. While the focus on delivery still plays an important role, the idea of government-as-a-platform is becoming less central. The value proposition is described through user needs, efficiencies and savings, and increasingly through the notions of trust and trustworthiness (of its main products and as a partner). This, we argue, is the GDS's current phase.

---

[4] Available here: https://www.gov.uk/guidance/government-design-principles.
[5] The key events are detailed on the GDS website, with relevant links to blogs and other official documents: https://gds.blog.gov.uk/story/.

One of our interviewees[6] summarised the three-phased evolution of GDS as follows:

> I think that GDS has been on sort of three-to-five-year blocks of the journey. And each iteration has re-evaluated what value it is bringing to the government and what its key purposes are. So in the early days, it was to build a thing and shout about it, and then it became about heavily enforcing policy by spending controls and so on. Then, over time, it became more collaborative, and let's talk about this and work with the departments. (Interviewee 1)

We describe each phase in more detail below, weaving in major events during each period.

Phase one: Strategy is delivery (2011–2015)

A unique ethos and pull

In line with Martha Lane Fox's recommendations, the early years of GDS were characterised by the unusual degree of high-level political support it enjoyed. The GDS leadership team, for its part, was astute in translating this support into building a very unusual public organisation. For example, from very early on, GDS set out to hire people from both the private sector as well as the civil service. Whilst the practice of employing both contractors and civil servants inevitably led to unclear career progression pathways and inequalities in pay, it also enabled GDS to grow very quickly. The hiring of like-minded people worked effectively to exert normative control (Mintzberg, 1996), as new employees quickly bought into the leadership team's emphasis on user needs, design principles and the revamping of procurement practices. The BBC proved a particularly good source of talented employees for GDS. However, already in 2014 GDS introduced a new fast stream in the British civil service, the DDaT (Digital, Data and Technology) Fast Stream, which marked GDS' early efforts to standardise and professionalise the new skills and novel ways of working that it sought to bring into government.

A crucial reason why so many talented programmers and designers wanted to join GDS, despite lucrative offers in the private sector, was their long-standing perception that the government was systematically failing on digital. The widely publicised failings on the part of the NHS to digitise its services (see, for example, Currie, 2012; Currie and Guah, 2007) had further increased this perception (Interviewee 7). Many of the early employees shared a vision of value the internet could provide to both the government and society at large:

> *Actually, what was important to GDS was people like Paul Downey, who was old school … [in that] he believed in the open web. And so did Tom and so did Mike; they had a vision of how the web should work. And the government actually turned out to be the most relevant place for it to be brought to light at the time when we were also starting to see Facebook and Google and everyone close it down.* (Interviewee 7)

---

[6] All interviews have been edited for basic grammar and readability.

In addition to the commitment towards an open web, the early leadership team shared a belief in the utility of design thinking in transforming rigid government structures.[7] The initial 'alpha' version of the first, and even to this day best-known GDS product, GOV.UK, was developed in 12 weeks for £261,000. In a blog post dating to 2011, GDS leadership team member Tom Loosemore was quick to hail the exceptional nature of the feat:

> *A boundary-pushing experimental prototype (aka a Minimum Viable Product) was delivered by an in-house team working in an open, agile way, placing user needs at the core of the design process. This isn't a new approach, but it's one that's still all too rare across government.* (Loosemore, 2011)

The aforementioned elements made GDS into a unique public institution that was able to compete for the most sought-after employees with the private sector. One interviewee, who had a background in private sector consultancy, described the unusual excitement and pull of early GDS:

> *And I literally walked into the [GDS] office having worked with a lot of government departments during my time at private consultancies, and it was just like, you know, totally different. I just felt like I so want to work here; this is what I want to do. I want to deliver change to government, not just write documents or have strategy meetings about how we might do that. So even just walking in felt so different to anything I've experienced before.* (Interviewee 2)

The above comment underscores the ability of the early GDS to provide the organisation, and thereby its employees, a sense of unique purpose and mission.

In January 2012, GOV.UK went into beta, and by October it replaced all Directgov websites to create a single domain for accessing both services and information. During that same year, GDS announced a two-year project to update 25 of the largest transactional services in government, with these becoming known as the exemplar projects. The focus on the largest transactional services helped GDS showcase its novel ways of working and, above all, its radical shift in the way it gathered and analysed information for its activities: its relentless focus on users.

Changing the epistemological focus of government

Governments typically rely on wide-ranging analytical tools from qualitative analysis to complex models to generate knowledge about policy options prior to their implementation and ex-post analysis. As we argued above, since the early 2000s governments have been looking to create innovation labs (Tõnurist et al., 2017) and one of the key innovations such labs brought to the government was to change the lenses policymakers use in order to gather knowledge about government activities. Starting with Mindlab in Denmark, such labs were able to show that, by focusing on understanding user needs, the effectiveness of policies can be increased through better delivery (Carstensen and Bason, 2012). In its formative years, GDS based its entire way of

---

[7] Key founding figures of GDS, Andrew Greenway, Ben Terrett, Mike Bracken and Tom Loosemore published a book in 2018 entitled *Strategy is delivery.*

working on this epistemological shift. In his first blog post at GDS, Mike Bracken defined service transformation as follows:

> *So, when we talk about "transformation", we don't just mean messing about with the hardware and software that makes things happen. We mean thinking about the whole service, getting a multidisciplinary team together, and transforming the experience for users, for the people who are seeking help when they put in a claim. We mean delivering a better experience for them, doing something that makes a genuine difference to their lives.* (Bracken, 2014)

In the early days of GDS, this meant taking down many of the pre-existing websites, as they often provided superfluous information, or in some cases were outright misleading. This is perhaps best exemplified by one of the most frequently used examples from that time. A general query on "What is the UK government's policy on Afghanistan?" resulted in a number of policy documents providing different answers to the same question. GDS set out to change this early on (Interviewee 3).

Thus, in the first phase of GDS, the focus on user needs was expressed by two basic principles: First, citizens searching for information (often through search engines such as Google) about public policies and services should easily find a truthful and simple answer; and second, the resulting transactions (filing a claim, changing a license), should be as user friendly as possible. GOV.UK purposely mimics the experience of using commercial online platforms, with the important addition of value neutrality (it is agnostic regarding policy changes).

This "utilitarian" approach to user needs enabled GDS to instil alternative principles of information (one question should have one answer) that in turn necessitated changes in data management (quality of registries), user information analysis, and the tools that the government uses to generate and publish content. While the approach relied on an epistemological shift to gathering and analysing information about citizen needs, it also harboured an even more radical need to reorganise government structure, as expressed in an interview:

> *... the example that is often used is that if you import a car, for example, you have to deal with six government agencies, vehicles and tax, and they typically make you fill in different bits of paper for each one and get a reference from one to the other. ... you could kind of do that on the front of things and behind the scenes, it would still be separate, or you have a decent data architecture where you could literally do that stuff programmatically. And then you started to look at massive changes of efficiency and even potential need for certain departments to exist in the shape that they do today. That was always the big idea, the SimCity style, the diagram of government as a platform underneath.* (Interviewee 9)

The utilitarian approach is also expressed in the GDS design, which consciously saw itself as continuing the design canon of Frank Lloyd Wright, Joseph Bazalgette and Norman Foster, with its guiding principles of dignity and simplicity. Creating a standard digital visual outlook for the

government followed from the idea that simple form leads to better servicing of user needs.[8] However, the fact that the utilitarian approach and the canon itself might be based on a hierarchical (male, white) view of user value was rarely considered. Our interviewees reflected on the limitations of the utilitarian focus on user needs, and its underlying epistemological shift:

> *I think there is a strong assumption – and I genuinely don't know if this is right or wrong – that people want their interactions with the state to be brief, functional, and done as fast as possible. So, in essence, a very transactional relationship with the state.* (Interviewee 4)

> *I think one of the things…we did do in GDS was focus too much on user's digital experiences, and not necessarily enough on the broader set of user needs that people have. We were kind of disrespectful to the user, we didn't value the user needs of people across all the channels or who might not be able to use digital channels, we were very much focused on it being a digital experience.* (Interviewee 2)

Revamping procurement

Prior to GDS, the way that the government structured information was tightly connected to the way it developed digital infrastructure, which was mostly by outsourcing it through large procurement contracts (see Section 4 above). As one interviewee (6) explained, this created a system of "failure by design", whereby a failed public IT project eventually led to a new large-scale procurement contract. Even the simplest website management was outsourced at huge costs, as one interviewee recollected:

> *You know, when we arrived, there was a site called Business Link … I think the contract had been all the procurement to be done with BT, who had outsourced it to IBM. And it was a website with maybe 500 static pages, and it was costing 50 million pounds a year. We ended up funding quite a lot of GDS from the money we saved in closing down Business Link. If you wanted to change a page on that, you had to pay IBM 10,000 pounds. You know, it was basically just the government being ripped off because it didn't understand and again that's the stuff that doesn't really get talked about, partly because it's not unusual. It's happening everywhere all the time.* (Interviewee 7)

The poor digital infrastructure, in turn, generated a massive failure demand (demand caused by failure to do something right for the users), increasing the strain on actual service provision and IT units in public organisations. Hence, increasing the success rate of IT projects became the second cornerstone of GDS's value proposition (next to user needs), as well as one of its key metrics. In 2013, GDS launched the Digital Services Framework, which laid the ground rules for digital procurement, and in 2014 this was supplemented by new rules for public sector IT contracts.[9]

---

[8] The design itself was inspired by various modernist projects from postwar Britain, and most strongly by the transport font and road signs developed in early 1960s by Margaret Calvert and Jock Kinneir (Interviewee 5).

[9] See further here: https://www.gov.uk/government/news/government-draws-the-line-on-bloated-and-wasteful-it-contracts.

The latter rules also formed the basis for spend controls exercised by GDS on all larger government digital projects. In the same year, GDS' Digital Marketplace, "a simplified version with increased functionality for suppliers and buyers", replaced the G-Cloud CloudStore.

The radical revamping of government digital procurement – effectively a market reshaping and creation of common public sector standards for (agile) digital procurement with effective enforcement mechanism through spend controls on public digital projects – was met with huge resistance from the large IT suppliers:

> ... IBM had a seat on the board of the DVLA [Driver and Vehicle Licensing Agency]. So arm's-length bodies had companies on their boards. IBM was the largest single supplier to DVLA and they had a seat on the board. So we spent…nine months to a year getting IBM off the board of the DVLA. … And so we used to talk about it all the time in presentations; you know, no more big IT was one of the things we said and we talked about the oligopoly. (Interviewee 7)

It can be argued that the first phase of GDS ended in August 2015 with Mike Bracken announcing his departure amid rumours of a wider shake-up. Soon, other key figures such as Tom Loosemore and Ben Terrett also left. However, in a surprising turn of events, the 2015 spending review, instead of slashing GDS's funding, increased it to £450 million over four years until 2020.[10] Amid the shakeup, in 2016 the UK claimed the top spot in the United Nations' e-government index, showing the increasing international visibility and impact of GDS.

Phase two: Government as a Platform (2016–2018)

A limited uptake of an original idea

The idea of government as a platform (GaaP) has captured the imagination of many governments in recent years, including the UK's. Originally conceived by Tim O'Reilly (2011), GaaP envisages the transformation of the coordination among public administration from closed, structured, and formalised hierarchical relationships into open, flat, and unstructured relationships. A further ambition of the framework is that shared software, data, and services can help to open up public service production processes to actors previously excluded from them (for an overview, see Pope, 2019).

In the GDS context, GaaP was mentioned already in 2013 by Liam Maxwell, at that time the UK Government's chief technology officer, who suggested that "we will implement government as a platform, providing departments with common business functionality that can be reused by multiple users in multiple service areas" (Maxwell, 2013).

In the period from 2015 to 2017, GaaP arguably became the dominant focus of GDS. Its Sprint 15[11] was dedicated to GaaP; in 2016 GDS launched GOV.UK Pay, GOV.UK Notify and GOV.UK

---

[10] See here for details: https://civilservice.blog.gov.uk/2015/12/08/digital-in-the-spending-review/.
[11] For further details on GDS's 'sprints', and this one in particular, see https://gds.blog.gov.uk/2015/02/04/sprint-15-round-up/.

Verify. In 2016, *Principles for Government as a Platform* products were published.[12] It is important to note, and in comparison to the GOV.UK intervention, that none of these platforms are mandatory and public organisations in the UK (and eventually elsewhere) are free to opt-in or out of using them. By November 2020, 2.02 billion notifications had been sent using Notify, 10.7 million had been made using Pay, and 22 services were using Verify with 7.5 million users.[13]

While the uptake of GaaP at GDS was initially strongly influenced by the vision set out by O'Reilly (2011), the actual application of the idea at GDS was rather different. One interviewee explained to us that, from early on, GDS approached the idea of GaaP with its own specific focus on:

> *… failure demand and getting the government to work together to build common tools for government … the stuff they did were much more about how you could decrease failure demand … we can stop different departments duplicating each other's work while fighting over the same resources and actually pull that stuff together.* (Interviewee 5)

Thus, from the outset, GaaP became a way for GDS to build on its idea of reducing failure demand, combined with the focus on user needs, as a central tenet of its work and, in doing so, establishing shared building blocks for public organisations to use for their services.

Our interviewees explained that the real value and potential in GaaP lies not in the cost-savings that it might generate (more on this below), but in its enormous potential for unlocking service innovation in the public sector by, in essence, creating unused resources. Thus, "*the value in platforms is not necessarily the direct cost savings, although there are some, but in what it unlocks because it makes experimentation cheaper, and iteration cheaper*" (Interviewee 8). GaaP potentially provides public agencies with more agility as "*it isolates certain risks into certain individual pots … there's one hopefully well-funded, well designed, robust way of doing it, which means that the risk is in one place and can be much more easily controlled in that space … It also means that we can change direction much more easily on a government level …*" (Interviewee 1).

GaaP leads to deeper partnerships with other departments

Although GDS published a *Government Transformation Strategy* in 2017, which solidifies the focus on cross-governmental platforms,[14] it has not launched any other platforms to date. The wide consensus is that Pay and Notify work very well, but that Verify is a weaker platform, as underlined by its smaller uptake. As digital competencies of other government departments and agencies have increased, and as competition from the private sector has accelerated, the GaaP approach has started to lose momentum at GDS.

---

[12] See here for details: https://governmentasaplatform.blog.gov.uk/2016/02/29/governmentasaplatform-foundations/.

[13] All of the GOV.UK platforms publish their usage data on respective dashboards.

[14] See here: https://www.gov.uk/government/publications/government-transformation-strategy-2017-to-2020/government-transformation-strategy.

I think maybe there's also been a bit of scepticism towards not necessarily the government as a platform concept, but how the products fit within the market and what they potentially do to the market as well. And some, a little bit of kind of fear. … I guess that's the fundamental question of, are we actually building something to cover a market failure and should the government be doing that. Should we just look to the market anyway to buy this stuff? (Interviewee 10)

In the GaaP phase, GDS has seen itself less and less as a market shaper and has been increasingly aware of the need to cooperate both with other public organisations as well as with private companies. Furthermore, it has been under ever-increasing pressure to show the cost savings of its platforms and demonstrate that it is not disrupting markets in any negative ways.

GDS was indeed able to show enormous savings during its first three years of activities: it had allegedly saved up to £3.56 billion by 2015.[15] With the increased funding after the 2015 spending review, GDS was obligated to show how much it can save for the rest of the government (Interviewee 9).

During this period, GDS' impact on the wider government has increasingly taken place through the spreading of skills in other departments, forming and maintaining communities of practice, and building the professional standards of its core capabilities around digital and design. For many departments, GDS was the catalyst for change:

The thing I would say, though, that we haven't sort of mentioned is that GDS was an effective catalyst, and provided cover for the departments to set up their own teams internally and some departments are much further ahead than … And so there was a successful effort to introduce skilled leaders and give them a mandate to build their teams and do stuff. And that was quite successful. (Interviewee 12)

Importantly, other government departments have caught up with GDS in terms of their digital capabilities:

Departments are smarter consumers of these things, because their capability has grown. All of them always had some degree of capability. … We have communities around them [GaaP products] *as well. We cultivate these communities through things like slack channels where people can ask questions, kind of to us but what we end up seeing is more often than not other teams have gone through the same thing and they share ideas or templates or patterns or whatever.* (Interviewee 9)

Thus, the success of GDS products inevitably led to shifts in its ways of working across government. Somewhat counterintuitively, the early success of the GDS and increasing spread of digital capabilities across government departments, often driven by GDS, meant that GDS itself became less relevant.

---

[15] Data is shown here: https://gds.blog.gov.uk/2015/10/23/how-digital-and-technology-transformation-saved-1-7bn-last-year/.

Phase three: Professionalisation (2018–present)

A focus on partnerships and standardisation

While the 2015 spending review secured GDS a significant funding bump, the political support it enjoyed was much more fickle in the post-Brexit vote era. In 2019, Parliament's Science and Technology Select Committee's Digital Government report concluded that there was a slowing down in government's digital momentum and recommended that GDS's purpose should be twofold: "to provide advice to departments when needed, but also to devise and enforce minimum standards consistently across Government digital services."[16] This was foreshadowed in 2018 when the then-GDS Director General Kevin Cunnington wrote in a blog post about the progress of the government's digital strategy, focusing on the role of GDS across the government: "As well as giving government the tools and resources to transform the way they operate and build better services, we're also working with departments to create the right structure and support for transformation."[17]

Accordingly, since 2018 GDS has focused less on GaaP and more on cross-governmental cooperation, standards and professionalisation of civil servants in the technology and design jobs. Today, GDS is in charge of digital and technology function in the civil service and this is perhaps the key change in the narrative of what GDS's role is. A current and a former GDS employee outlined the organisation's current role within government:

> I think fundamentally professionalising the civil service is the big strand of work, sort of the functional agenda that our chief executive has led, and I think over the last three years there's been a maturing of that. GDS is also head of the Digital, Data and Technology Function across government, which is 17,000 people. And I think it's part of that just enabled us to have a slightly different relationship with departments.
> (Interviewee 11)

However, some have noted a certain shallowness of the uptake in other departments. Its impact has also been rather uneven, leading to a certain shallowness in engagement, as demonstrated in the quote below:

> I think when you talk about the content, it wasn't really deep service transformation … and part of GDS legacy is, unfortunately, loads of people using all of these terms like discovery, alpha and beta, and things like experimentation, prototyping, as a way of working without that vision or goal of why or what they're trying to achieve. So we've almost turned it into a process that they just simply follow. And we've made it really easy for people to prototype infinitely. It's almost like because you've lowered those barriers to being able to do this stuff, because prototyping is quite easy. We're doing more and more of it, but not necessarily delivering better services because of it.
> (Interviewee 2)

---

[16] Available here: https://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/news-parliament-2017/digital-government-report-publication-17-19/.

[17] See here: https://gds.blog.gov.uk/2018/02/08/the-government-transformation-strategy-one-year-on/.

Next to its main GaaP products (Notify, Pay, Verify), Digital Marketplace and leading on digital and technology function across the government, GDS is still in charge of spend controls of most government digital projects, which gives it an important vehicle to ensure its service and capability standards are being followed by other departments and agencies (Interviewee 13). However, there is a sense that GDS is not able to go beyond its initial focus on user needs (providing better transactions) in a significant way:

> *The real goal is to be changing the whole organisation and make it into a digital one. On that maturity curve, we're still fixing transactions all these years later, eight years later, and you might have expected it to take a while, but there's very few examples anywhere in government of anyone even trying to make their organisation into a digital organisation ...* (Interviewee 12)

Table 1 summarises the features of GDS's three-phase evolution.

Table 1. Summary of GDS's three-phase evolution

	Strategy is delivery	**Government as a platform**	**Professionalisation**
The focus of digital transformation	Transformation through focus on search and user experience	Transformation through creation of multiple platforms	Transformation through guidance and cooperation
What value GDS is producing	Doing government differently via focusing on user needs	Institutional innovations within government	A trustworthy partner for public and private organisations
Relations to market	Shaping markets	Partnering with market actors	Providing public goods
Cross-governmental relations	Show new ways of working and values	Provide building blocks to other departments to transform their services	Advisor in quality insurance of departmental digital transformation processes and products
Focus of skills	Bringing new digital skills to government	The professionalisation of new digital careers within GDS	Cross-governmental professionalisation of new digital careers
Period	2011–2015	2016–2018	2018–Present

6.   Discussion: Evolution of dynamic capabilities

The creation of GDS confirms some of the main expectations of how dynamic capabilities emerge in public organisations. First, there was an alignment of multiple external factors (such as high-level political support, availability of critical mass of motivated and talented people wanting to work for the government) and, second, high levels of internal dissatisfaction with existing ways of working in government IT. There was, simply put, ample evidence that government IT, particularly how it was procured, did not work and that it could be done differently.

As we posited, dynamic capabilities are a way of questioning existing routines and the establishment of GDS was a conscious effort to change existing IT routines in the UK government. However, the evolution of GDS shows that dynamic capabilities can be absorbed into wider public administration context, so these capabilities need constant renewal. Interestingly, the idea of GaaP, as initially conceived by GDS, was meant to provide, at least partially, the source of renewal of dynamic capabilities, not only in GDS but also across other government departments' digital transformation efforts. GDS has successfully professionalised these new routines beyond its own organisational boundaries. However, this success came at a price of waning dynamic capabilities within GDS and its wider context.

Initially, the capabilities that GDS brought into government formed around a redefinition of value proposition (a focus on user needs and the need to diminish failure demand), accompanied by an influx of people who could deliver towards this new notion of value. It is worth noting that many of the people hired by GDS outside the civil service did not come from the private sector but also from the BBC and other similar public or third-sector organisations. In its initial years, GDS was managed by normative control functions, such as hiring like-minded people, that allowed it to grow quickly and scale its activities. The value system underlying GDS was inspired as much by post-war British modernism, with its focus on public space, as by the open web movement and hacking in a positive sense.

GDS was a dynamic and agile organisation that was able to jump-start digital transformation through a single website (GOV.UK) and revamp government IT contracts through service frameworks and spend controls. Its market-shaping abilities were formidable. However, the utilitarian approach to user needs (simplicity and authenticity of transactions) also made it susceptible to market-based logic of austerity (savings as the main metrics), which, it can be argued, has undermined GDS's ability to build platforms.

7.   Conclusion

In the last few years, GDS has become the standard-bearer for the digital and design profession within the UK government. To use an analogy here, the hackers have become the new mandarins, or at least the mandarins have co-opted some of the capabilities brought in by the GDS. Initial dynamic capabilities have increasingly become part of routine skills that many departments and agencies should have in-house, rather than relying on a central agency. In this sense, and somewhat counterintuitively, GDS has become a victim of its own success. As other government

departments have internalised their most valuable capabilities, GDS has found it difficult to develop new cross-government platforms, and its cost-based metrics put it in a defensive rather than a proactive situation. Perhaps unsurprisingly, institutionalisation has put constraints on the original dynamism and agility of the organisation. We argue that this is an example of how dynamic capabilities evolve in public organisations: they become part of a wider organisational landscape and the original sources and reasons driving the dynamic capabilities need to be renewed. Dynamic capabilities require constant nurturing within public organisations.

GDS now faces the difficult question of what its value is to the government (and users) beyond providing efficiency gains. What value proposition can it develop beyond utilitarian notions of user needs (transactions) and failure demand? With the ever-increasing scope of the private platform providers, such as Amazon and Google, that offer hosting and other services to governments and thereby play a prominent role in shaping digital marketplaces, GDS faces questions about its role in the wider landscape of (digital) industrial policy. In other words, GDS needs to find new sources of dynamic capabilities, and purpose and vision, as the context within government machinery and external market actors within which it functions continue to change at an ever-increasing pace.

References

Alford, J., Hartley, J., Yates, S., et al. (2016). Into the Purple Zone: Deconstructing the Politics/Administration Distinction. *The American Review of Public Administration,* 47(7), pp. 752–763. DOI: 10.1177/0275074016638481.

Amsden, A. (1989). *Asia's Next Giant: South Korea and Late Industrialization*. Oxford University Press.

Bason, C. (2017). *Leading Public Design*. Bristol Chicago, IL: Policy Press.

Birkinshaw, J. and Duncan, S. (2014). *The UK Government Digital Service*. London Business School.

Breznitz, D. and Ornston, D. (2013). The Revolutionary Power of Peripheral Agencies: Explaining Radical Policy Innovation in Finland and Israel. *Comparative Political Studies.* DOI: https://doi.org/10.1177/0010414012472466.

Breznitz, D., Ornston, D. and Samford, S. (2018). Mission critical: the ends, means, and design of innovation agencies. *Industrial and Corporate Change,* 27(5), pp. 883–896. DOI: 10.1093/icc/dty027.

Carstensen, H.V. and Bason, C. (2012). Powering collaborative policy innovation: Can innovation labs help? *The Innovation Journal,* 17(1), pp. 2–26.

Clarke, A. (2019). Digital Government Units: What Are They, and What Do They Mean for Digital Era Public Management Renewal? *International Public Management Journal*, 1–31. DOI: 10.1080/10967494.2019.1686447.

Currie, W. L. (2012). Institutional isomorphism and change: the national programme for IT – 10 years on. *Journal of Information Technology,* 27(3), pp. 236–248. DOI: 10.1057/jit.2012.18.

Currie, W. L. and Guah, M. W. (2007). Conflicting institutional logics: a national programme for IT in the organisational field of healthcare. *Journal of Information Technology,* 22(3), pp. 235–247. DOI: 10.1057/palgrave.jit.2000102.

DeVault, M. L. and McCoy, L. (2001). Institutional Ethnography: Using Interviews to Investigate Ruling Relations. In: Gudbrium JF and Holstein JA (eds.) *Handbook of Interview Research: Context and Method*. Thousand Oaks, CA: SAGE, pp. 751–76.

Drechsler, W. and Kattel, R. (2020). Debate: The developed civil servant – providing agility and stability at the same time. *Public Money & Management,* 1–2. DOI: 10.1080/09540962.2020.1729522.

Dunleavy, P., Margetts, H., Tinkler, J. et al. (2006) *Digital Era Governance: IT Corporations, the State, and E-Government*. OUP Oxford.

Eaves, D. and Goldberg, D. (2017). *UK Government Digital Service: Moving Beyond a Website*. HKS Case. Harvard Kennedy School. Available at: https://case.hks.harvard.edu/uk-government-digital-service-moving-beyond-a-website/ (accessed 27 January 2020).

Evans, G. (1998). Britain and Europe: Separate Worlds of Welfare? *Government and Opposition,* 33(2), pp. 183–198.

Evans, P. (1995). *Embedded Autonomy*. Princeton: Princeton University Press.

Evans, P. and Rauch, J. E. (1999). Bureaucracy and Growth: A Cross-National Analysis of the Effects of "Weberian" State Structures on Economic Growth. *American Sociological Review,* 64(5), pp. 748–765. DOI: 10.2307/2657374.

Fox, M. L. (2010). Directgov 2010 and beyond: Revolution not evolution.

Gioia, D. A., Corley, K. G. and Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. *Organizational Research Methods,* 16(1), pp. 15–31. DOI: 10.1177/1094428112452151.

Glaser, B. G. and Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Mill Valley, CA: Sociology Press.

Government Digital Service (2017). *Government Transformation Strategy 2017 to 2020*. Available at: https://www.gov.uk/government/publications/government-transformation-strategy-2017-to-2020 (accessed 21 May 2020).

Greenway, A. (2020). The Government Digital Service truly was once world-beating. What happened? *The Guardian*. Available at: https://www.theguardian.com/society/2020/sep/24/government-digital-service-truly-was-once-world-beating-what-happened (accessed 18 November 2020).

Guy Peters, B. (2018). Policy Capacity in Public Administration. In: Wu X, Howlett M, and Ramesh M (eds.) *Policy Capacity and Governance: Assessing Governmental Competences and Capabilities in Theory and Practice*. Palgrave Macmillan, pp. 29–48.

Haggard, S. (1990). *Pathways from the Periphery: The Politics of Growth in the Newly Industrializing Countries*. Cornell University Press.

Halperin, R. and Backhouse, J. (2012). Trust, risk and eID: Exploring public perceptions of digital identity systems. *First Monday,* 17(4–2). DOI: doi:10.5210/fm.v17i4.3867.

Hartley, J. (2018). Ten propositions about public leadership. *International Journal of Public Leadership,* 14(4). Emerald Publishing Limited, pp. 202–217. DOI: 10.1108/IJPL-09-2018-0048.

Hill, D. (2015). *Dark Matter and Trojan Horses: A Strategic Design Vocabulary*. Strelka Press.

House of Commons Public Administration Committee (2011). *Government and IT – "A Recipe For Rip-Offs": Time For A New Approach*. Available at: https://publications.parliament.uk/pa/cm201012/cmselect/cmpubadm/715/71502.htm (accessed 20 March 2020).

Karo, E. and Kattel, R. (2018). Innovation and the State: Towards an Evolutionary Theory of Policy Capacity. In: Wu X, Howlett M, and Ramesh M (eds.) *Policy Capacity and Governance: Assessing Governmental Competences and Capabilities in Theory and Practice*. Studies in the Political Economy of Public Policy. Cham: Springer International Publishing, pp. 123–150. DOI: 10.1007/978-3-319-54675-9_6.

Kattel, R. and Mazzucato, M. (2018). Mission-oriented innovation policy and dynamic capabilities in the public sector. *Industrial and Corporate Change* 27(5), pp. 787–801. DOI: 10.1093/icc/dty032.

Kattel, R. and Mergel, I. (2018). Estonia's digital transformation: Mission mystique and the hiding hand. *IIPP WP 2018-09*. UCL Institute for Innovation and Public Purpose Working Paper. Available at: https://www.ucl.ac.uk/bartlett/public-purpose/publications/2018/sep/estonias-digital-transformation-mission-mystique-and-hiding-hand.

Kattel, R., Drechsler, W. and Karo, E. (2019). *Innovation bureaucracies: How agile stability creates the entrepreneurial state*. UCL Institute for Innovation and Public Purpose, Working Paper Series (IIPP WP 2019-12). Available at: https://www.ucl.ac.uk/bartlett/public-purpose/wp2019-12.

Kim, Y. and Zhang, J. (2016). Digital government and wicked problems. *Government Information Quarterly,* 33(4), pp. 769–776. DOI: 10.1016/j.giq.2016.10.004.

Lapuente, V. and Van de Walle, S. (2020). The effects of new public management on the quality of public services. *Governance,* 33, pp. 461– 475. DOI: 10.1111/gove.12502.

March, J. G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science,* 2(1), pp. 71–87. Available at: http://www.jstor.org/stable/2634940.

Maxwell, L. (2013) Rebalancing technology across government - Government Digital Service. In: *Government Digital Service blog*. Available at: https://gds.blog.gov.uk/2013/05/21/rebalancing-tech-across-gov/ (accessed 4 May 2020).

Mazzucato, M. and Kattel, R. (2020). COVID-19 and public sector capacity. *Oxford Review of Economic Policy*.

Mergel, I. (2019). Digital service teams in government. *Government Information Quarterly,* 36(4). DOI: 10.1016/j.giq.2019.07.001.

Mergel, I. (2020). Agile: A new way of governing. In: *Medium*. Available at: https://medium.com/@inesmergel/agile-a-new-way-of-governing-8e2c8f7efd1 (accessed 20 April 2020).

Miles, M. B., Huberman, A. M. and Saldana, J. (2013). *Qualitative Data Analysis: A Methods Sourcebook*. Third edition. Thousand Oaks, California: SAGE Publications.

Mintzberg, H. (1989). *Mintzberg on Management. Inside Our Strange World Of Organizations*. New York and London: Free Press/Collier Macmillan.

Mintzberg, H. (1996). Managing Government, Governing Management. *Harvard Business Review*. Available at: https://hbr.org/1996/05/managing-government-governing-management (accessed 20 April 2020).

National Audit Office (2017). *Digital transformation in government*. Cabinet Office. Available at: https://www.nao.org.uk/wp-content/uploads/2017/03/Digital-transformation-in-government.pdf.

O'Reilly, T. (2011). Government as a Platform. *Innovations: Technology, Governance, Globalization,* 6(1), pp. 13–40.

Painter, M. and Pierre, J. (2005). Unpacking Policy Capacity: Issues and Themes. In: Painter M and Pierre J (eds.) *Challenges to State Policy Capacity: Global Trends and Comparative Perspectives*. London: Palgrave Macmillan UK, pp. 1–18. DOI: 10.1057/9780230524194_1.

Penrose, E. (2009). *The Theory of the Growth of the Firm*. Oxford: Oxford University Press.

Perri, 6 (2007). Don't Try This at Home: Lessons from England. In: *Digital State at the Leading Edge,*. Institute of Public Administration of Canada Series in Public Management and Governance. University of Toronto Press, pp. 325–54.

Peters, B. G. (2017). Full article: What is so wicked about wicked problems? A conceptual analysis and a research program. *Policy and Society,* 36(3), pp. 385–396. DOI: https://doi.org/10.1080/14494035.2017.1361633.

Piening, E. P. (2013). Dynamic Capabilities in Public Organizations. *Public Management Review* 15(2). Routledge: pp. 209–245. DOI: 10.1080/14719037.2012.708358.

Pope, R. (2019). Government as a Platform, the hard problems: part 1 – Introduction. In: *Medium*. Available at: https://medium.com/digitalhks/government-as-a-platform-the-hard-problems-part-1-introduction-b57269bcdc6f (accessed 31 October 2019).

Rapley, T. J. (2001). The art(fulness) of open-ended interviewing: some considerations on analysing interviews. *Qualitative Research,* 1(3), pp. 303–323. DOI: 10.1177/146879410100100303.

Ross, M. (2018). The rise and fall of GDS: lessons for digital government. *Global Government Forum*. Available at: https://www.globalgovernmentforum.com/the-rise-and-fall-of-gds-lessons-for-digital-government/ (accessed 26 March 2020).

Teece, D. and Pisano, G. (1994). The Dynamic Capabilities of Firms: an Introduction. *Industrial and Corporate Change,* 3(3), pp. 537–556. DOI: 10.1093/icc/3.3.537-a.

Teece, D. J., Pisano, G. and Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal,* 18(7), pp.509–533. DOI: 10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z.

The Economist (2020). The sad tale of Britain's Government Digital Service. *The Economist*. Available at: https://www.economist.com/britain/2020/10/31/the-sad-tale-of-britains-government-digital-service (accessed 3 November 2020).

Tõnurist P, Kattel R and Lember V (2017). Innovation labs in the public sector: what they are and what they do? *Public Management Review,* 19(10), pp. 1455–1479. DOI: 10.1080/14719037.2017.1287939.

van Buuren, A., Lewis, J. M., Guy Peters, B. et al. (2020). Improving public policy and administration: exploring the potential of design. *Policy & Politics,* 48(1). Available at: https://www.ingentaconnect.com/content/tpp/pap/2020/00000048/00000001/art00001.

Wade, R. (1990). *Governing the Market*. Princeton University Press. DOI: 10.2307/j.ctv346sp7.

Wu, X., Howlett, M. and Ramesh, M. (eds.) (2018). *Policy Capacity and Governance: Assessing Governmental Competences and Capabilities in Theory and Practice*. Palgrave Macmillan.

Zollo, M. and Winter, S. G. (2002), Deliberate Learning and the Evolution of Dynamic Capabilities. *Organization Science,* 13(3). INFORMS: pp. 339–351. DOI: 10.1287/orsc.13.3.339.2780.

.